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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/817,980	03/27/2001	Herbert Lifka	NL 000157	9870

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PHILIPS INTELLECTUAL PROPERTY & STANDARDS
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BRIARCLIFF MANOR, NY 10510

EXAMINER

PERRY, ANTHONY T

ART UNIT	PAPER NUMBER
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2879

DATE MAILED: 12/02/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/817,980

Applicant(s)

LIFKA ET AL.

Examiner

Anthony T Perry

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-19 is/are rejected.
- 7) ☒ Claim(s) 4 and 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

In view of the Appeal Brief filed on 7/13/03, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

Claim Objections

Claims 4 and 5 are objected to because they claim dependency from canceled claim 2. Appropriate correction is required.

Claim Rejections - 35 USC § 102 / 103

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Morimoto et al. (4,542,317).

Regarding claim 1, Morimoto et al. discloses a display device in Fig. 7, comprising of a first substrate provided with a conductor pattern 12 and 13, parts of which form pixels (P of Fig. 7), characterized in that, at least in the viewing area of the display device, the conductor pattern 12 and 13, viewed in the direction from the conductor pattern 12 and 13 towards the substrate 11, substantially completely covers the corresponding part of the first substrate 11 (see 12 and P of Fig. 7). Part of the conductor pattern formed on the substrate is a metal film 12 (see col. 4, lines 11-12) represented by the slanted hash marks in Fig. 7. The conductor pattern 13 is made up of anode conductors that define pixels and are made of transparent conductive material deposited in the openings P of Fig. 7 (see col. 4, lines 28-30). On each of the anode conductors 13, a fluorescent layer 14 is deposited so as to cover at least the opening P to form an anode 15 (see col. 5, lines 1-6). Morimoto teaches that in the embodiment shown in Fig. 7, wiring conductors L for the anodes 15 (made up of anode conductors 13 and a fluorescent layer 14 as disclosed by Morimoto) are formed to be separate from the metal film 12 (see col. 7, lines 3-23). Paths S represent slits where the conductor pattern is not covering the substrate. Morimoto discloses a display device in Fig. 7 in which the parts of the conductor pattern, represented by the slanted hash marks are substantially mutually separated by partitioning paths S having a minimal path width (see Fig. 7 and col. 8, lines 24-27).

Alternatively, as a 103 obviousness rejection, one of ordinary skill in the art at the time of the invention would have found it obvious to have the partitioning paths of Morimoto be of a

minimal path width so that the partitioning paths would not be noticeable to the unaided eye, as well as to ensure an acceptable contrast, improving the overall quality of the display.

Regarding claim 3, Morimoto discloses a display device in which the partitioning paths S have a substantially constant width (see Fig. 7).

Regarding claim 4, Morimoto discloses a display device in Fig. 7 in which the partitioning paths S have a curved course. Fig. 7 shows the partitioning paths S having a curved course where they surround the part of the metal film E, which surrounds the openings P.

Regarding claim 5, Morimoto teaches a display device in Fig. 7 in which 80% of the partitioning paths S have a minimal path width. As taught in the applicant's disclosure, minimal path widths are not achieved in places where the partition paths form a corner. More than 80% of partitioning paths S in Fig. 7 of the Morimoto reference have a straight or curved course (do not form corners in which a minimal path width is not achieved).

Claims 1, 3, 5, and 6-19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Khan et al. (US 6,034,752).

Regarding claims 1, 3, 5, and 6-9, the Khan reference teaches a display device in Fig. 6 that comprises a layer of electro-optical material 52, chiral nematic liquid crystal, which is also a light emitting material, between two conductor patterns 56 on a first 46 and second 48 substrate (see col. 11, lines 15-17), at least one of which conductor patterns 56, viewed in the direction from the conductor pattern 56 towards the substrate 48, substantially completely covers the corresponding substrate 48. The first substrate 46 has a conductive pattern 56 coated on the side facing the second substrate (see Fig. 6 and col. 11, lines 45-47). The second substrate 48 is provided a conductive layer 56 (see col. 11, lines 41-43) preferably comprised of

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transparent Indium Tin Oxide (ITO) (col. 11, lines 61-62). A photoresist pattern is developed, baked and then placed in an acid bath to etch away unwanted regions of the ITO and create an electrode pattern (conductive pattern) 56 which defines pixels (see col. 15, lines 45-46). The conductor pattern is made up of elongated electrode strips each having a width of about 244 microns and a space between them of about 15 microns (col. 13, lines 46-50).

The Khan reference does not specifically state that the electrode strips extend the entire length and width of the viewing area. However, in order to control the light to be emitted from a point on an LCD, there must be an electrode on both sides of the liquid crystal. One of ordinary skill in the art at the time of the invention would have found it obvious to have the electrode patterns extend the length and the width of the viewing area so as to utilize the entire viewing area. Since one of ordinary skill in the art would have found it obvious to have the electrode patterns extend the length and the width of the viewing area and Khan teaches that the electrode strips (conductor patterns) are about 244 microns thick with a space between them of 15 microns, it is clear that the formed conductor pattern 56 substantially completely covers the corresponding substrate 48.

One of ordinary skill in the art would have found it obvious at the time the invention was made to have the partitioning paths be of minimal path width so as to increase the area of the display that is optically controllable, improving the contrast of the display, as well as to provide the images formed by adjacent pixel electrodes the appearance of being continuous to the unaided eye. Furthermore the path widths taught by Khan are 15-20 microns while the current application states that the "minimal path width is usually so small ($<25\text{ }\mu\text{m}$).” Even further, Khan teaches that the path widths may be made smaller by using a collimating light source in

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the process, suggesting that the path widths are minimal for the current process and that the process parameters would have to be changed to make the widths smaller. Since the path widths are straight the limitation of at least 80% of the path widths having a minimal width is surely satisfied.

Regarding claims 10-11 and 13, Fig. 6 of Khan et al. discloses a display device comprising a first substrate 46 confronting a second substrate 48. The first substrate 46 has a conductive pattern 56 coated on the side facing the second substrate (see Fig. 6 and col. 11, lines 45-47). The second substrate 48 is provided a conductive layer 56 (see col. 11, lines 41-43) preferably comprised of transparent Indium Tin Oxide (ITO) (col. 11, lines 61-62) facing the first substrate 46. A photoresist pattern is developed, baked and then placed in an acid bath to etch away unwanted regions of the ITO and create an electrode pattern (conductive pattern) 56 which defines pixels (see col. 15, lines 45-46). Khan teaches that the conductive patterns are made up of a plurality of elongated electrode strips each having a width of about 244 microns and a space between them of 15-20 microns (col. 13, lines 46-50).

Again, the Khan reference does not specifically state that the conductor patterns (electrode strips) extend the entire length and width of the viewing area. However, in order to control the light emitted from a point on an LCD, there must be an electrode on both sides of the liquid crystal. One of ordinary skill in the art at the time of the invention would have found it obvious to have the electrode patterns extend the length and the width of the viewing area so as to utilize the entire viewing area. Since one of ordinary skill in the art would have found it obvious to have the electrode patterns extend the length and the width of the viewing area and Khan teaches that the electrode strips (conductor patterns) are about 244 microns thick with a

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space between them of 15-20 microns, it is clear that the formed conductor patterns 56 substantially completely cover their corresponding substrates 48 and 46.

One of ordinary skill in the art would have found it obvious at the time the invention was made to have the partitioning paths be of minimal path width so as to increase the area of the display that is optically controllable, improving the contrast of the display, as well as to provide the images formed by adjacent pixel electrodes the appearance of being continuous to the unaided eye. Furthermore the path widths taught by Khan are 15-20 microns while the current application states that the "minimal path width is usually so small ($<25\text{ }\mu\text{m}$)." Even further, Khan teaches that the path widths may be made smaller by using a collimating light source in the process, suggesting that the path widths are minimal for the current process and that the process parameters would have to be changed to make the widths smaller.

Regarding claim 12, the Khan reference teaches that the facing electrodes are aligned perpendicularly to each other, which means that the first and second paths too are aligned perpendicularly within the viewing area of the display device (see col. 14, lines 16-17).

Regarding claim 14, the Khan reference teaches a display device in Fig. 6 that comprises a layer of electro-optical material 52, chiral nematic liquid crystal, which is also a light emitting material, between two conductor patterns 56 on a first 46 and second 48 substrate (see col. 11, lines 15-17).

Claims 1, 3, 5 and 15-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Young et al. (US 6,153,254).

Regarding claims 1 and 5, the Young reference teaches of a display device in Figs. 1, 2a, and 2b that comprises a conductor pattern 2, wherein the parts that are crossed over by

conductor pattern 8 define pixels. In such a device, light is only emitted where electrodes are formed on both sides of the electro-luminescent material 7.

Figs. 1, 2a, and 2b do not show the viewing area of the display device, however, one of ordinary skill in the art at the time the invention was made would have found it obvious to have the electrode patterns 2 and 8 extend at least the length and width of the viewing area so as to be able to utilize the entire viewing area for displaying a desired image. Since the electrode patterns extend the length and the width of the viewing area it is clear that the formed conductor pattern 2 substantially completely covers the substrate 1 within at least the viewing area of the device.

From viewing the Figs. 1-2 the partitioning paths between the electrode strips 2 appear to have a minimal path width. Furthermore, one of ordinary skill in the art would have found it obvious at the time the invention was made to have the partitioning paths be of minimal path width so as to improve the contrast of the display, as well as to provide the images formed by adjacent pixels the appearance of being continuous to the unaided eye. Since the partitioning paths are straight the limitation of at least 80% of the path widths being of a minimal width is surely satisfied.

Regarding claim 3, as shown in Fig. 1 the partitioning paths have a substantially constant width.

Regarding claim 15, the Young reference teaches of a display device in Figs. 1, 2a, and 2b that comprises an electro-luminescent material 7 between two conductor patterns 8 and 2. Young discloses an electro-luminescent display screen in which a flat substrate 1 is provided with a first pattern of conductors 2, then the first conductor pattern 2 is provided with an

organic electro-luminescent material 7 and then a second conductor pattern 8 (col. 1, lines 1-6). The first conductor pattern 2 has parts that are crossed over by conductor pattern 8 which define pixels. In such a device, light is only emitted where electrodes are formed on both sides of the electro-luminescent material 7.

Figs. 1, 2a, and 2b do not show the viewing area of the display device, however, one of ordinary skill in the art at the time the invention was made would have found it obvious to have the electrode patterns 2 and 8 extend at least the length and width of the viewing area so as to be able to utilize the entire viewing area for displaying a desired image. Since the electrode patterns 2 and 8 extend the length and the width of the viewing area it is clear that the formed conductor patterns 2 and 8 each substantially completely cover the substrate 1 within at least the viewing area of the device.

From viewing the Figs. 1-2 the partitioning paths between the electrode strips 2 appear to have a minimal path width. Furthermore, one of ordinary skill in the art would have found it obvious at the time the invention was made to have the partitioning paths be of minimal path width so as to improve the contrast of the display, as well as to provide the images formed by adjacent pixels the appearance of being continuous to the unaided eye. Since the partitioning paths are straight the limitation of at least 80% of the path widths being of a minimal width is surely satisfied.

Regarding claims 16-17, the paths shown in Fig. 1 are at least partially filled with an insulating material 6 (col. 4, lines 33-38). From viewing the Figs. 1-2 the partitioning paths between the electrode strips 2 appear to have a minimal path width. Furthermore, one of ordinary skill in the art would have found it obvious at the time the invention was made to have

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the partitioning paths be of minimal path width so as to improve the contrast of the display, as well as to provide the images formed by adjacent pixels the appearance of being continuous to the unaided eye. Since the partitioning paths are straight the limitation of at least 80% of the path widths being of a minimal width is surely satisfied.

Regarding claims 18-19, Fig. 1 shows the second conductor pattern 8 comprising a plurality of sub-electrodes 8 separated from each other by a second partitioning path. From viewing the Figs. 1-2 the partitioning paths between the electrode strips 8 appear to have a minimal path width. Furthermore, one of ordinary skill in the art would have found it obvious at the time the invention was made to have the partitioning paths be of minimal path width so as to improve the contrast of the display, as well as to provide the images formed by adjacent pixels the appearance of being continuous to the unaided eye. Since the partitioning paths are straight the limitation of at least 80% of the path widths being of a minimal width is surely satisfied.

Response to Arguments

Regarding the arguments based on the Morimoto et al. rejection under 35 U.S.C. 102:

With regards to the arguments associated with the rejection of claim 1, it has been acknowledged that the specification states, "The maximum distance between parts of the conductor pattern is defined in that parts of the conductor pattern are mutually separated by partitioning paths having a minimal path width. As, stated, this distance depends on process parameters but particularly on the tolerances of the photolithographic process used.....Although the words 'minimal path width' are used in this context, it will be evident that this minimal path

width will not have a constant value in practice, but may locally vary to some extent due to the influence of, for example, etching rates, dust particles, or other influences.”

MPEP section 2111.01 [R-1] states, “While the claims of issued patents are interpreted in light of the specification, prosecution history, prior art and other claims, this is not the mode of claim interpretation to be applied during examination. During examination, the claims must be interpreted as broadly as their terms reasonably allow. This means that the words of the claim must be given their plain meaning unless applicant has provided a clear definition in the specification.....One must bear in mind that, especially in nonchemical cases, the words in a claim are generally not limited in their meaning by what is shown or disclosed in the specification. It is only when the specification provides definitions for terms appearing in the claims that the specification can be used in interpreting claim language.”

Nowhere in the disclosure is there provided a definition for “minimal path width” and certainly not a clear definition as required by section 2111.01. The closest it comes to defining “minimal path width” is on page 2 where it states, “The minimal path width is usually so small (less than 25 microns) that the separation between the parts of the conductor pattern is not visible or hardly visible.” But even here it fails to provide a clear definition because it uses the term “usually” implying that sometimes the minimal path width is greater than 25 microns. The only thing the specification seems to provide is the obvious statement that the minimal path width depends on process parameters. Accordingly, the Examiner has acted appropriately by applying the definition of minimal given in Meriam-Webster’s Collegiate Dictionary Tenth Edition. As seen in Fig. 7 of Morimoto the partitioning path S is shown to be very small compared to the overall coating. It is noted that claim 1 is not limited to curved corners in order to have a

minimal path width. Therefore, it is the position of the Examiner that the partitioning paths S of Fig. 7, are of a very small width despite its sharp corners and therefore meet the limitation of “a minimal path width.”

With regards to the argument that the Examiner has come to the conclusion that the partitioning paths have minimal widths (in accordance with the dictionary definition) is from the visual interpretation of Fig. 7, not from anything taught or disclosed by Morimoto, the Examiner disagrees. Figures are part of the teachings and disclosure a reference.

Furthermore, MPEP section 2125 states “When the reference is a utility patent, it does not matter that the feature shown is unintended or unexplained in the specification. The drawings must be evaluated for what they reasonably disclose and suggest to one of ordinary skill in the art. In re Aslanian, 590 F.2d 911, 200 USPQ 500 (CCPA 1979).”

Furthermore, column 8, lines 24-26 of the Morimoto reference states that the conductor pattern is divided into a plurality of sections separated by “narrow” partitioning paths.

With regards to the argument that there is no indication in Morimoto that the device of Fig. 7 includes the conductor pattern 13, the Examiner disagrees. In column 7, lines 3-23, Morimoto teaches that the sole difference between the embodiment shown in Fig. 2 and the embodiment shown in Fig. 7, is that the embodiment shown in Fig. 7 provides separate wiring conductors L for the “anodes 15” separate from the metal film 12. As taught throughout the Morimoto reference, the anodes are located in the holes P and are composed of anode conductor parts 13 and fluorescent parts 14.

With regards to the argument that the Examiner has included parts 13 because without it the conductor pattern does not substantially completely cover the substrate, the Examiner

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disagrees. Parts 13 have been included to show the parts of the conductor pattern that define the pixels. Even without the parts 13, the metal film 12 alone in Fig. 7 substantially completely covers the substrate.

With regards to the arguments associated with the rejection of claims 3 and 5, again MPEP section 2125 states "When the reference is a utility patent, it does not matter that the feature shown is unintended or unexplained in the specification. The drawings must be evaluated for what they reasonably disclose and suggest to one of ordinary skill in the art. In re Aslanian, 590 F.2d 911, 200 USPQ 500 (CCPA 1979)."

From Fig. 7, one of ordinary skill in the art would have found the reference to disclose that the path widths are substantially constant. Furthermore, there is nothing in the written disclosure that teaches or suggests otherwise.

A substantial amount of the path widths are made up of straight lines rather than sharp corners, suggesting that the path widths are substantially constant and more than 80% of paths have a minimal width.

Applicant's arguments with respect to the rejections using Khan reference and the Young reference are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to *Anthony Perry* whose telephone number is (703) 305-1799. The examiner can normally be reached between the hours of 9:00AM to 5:30PM Monday thru Friday.

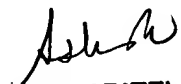
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel, can be reached on (703) 305-4794. The fax phone number for this Group is (703) 308-7382.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [Anthony.perry@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.


ASHOK PATEL
PRIMARY EXAMINER

Anthony Perry
Patent Examiner
Art Unit 2879
November 18, 2003